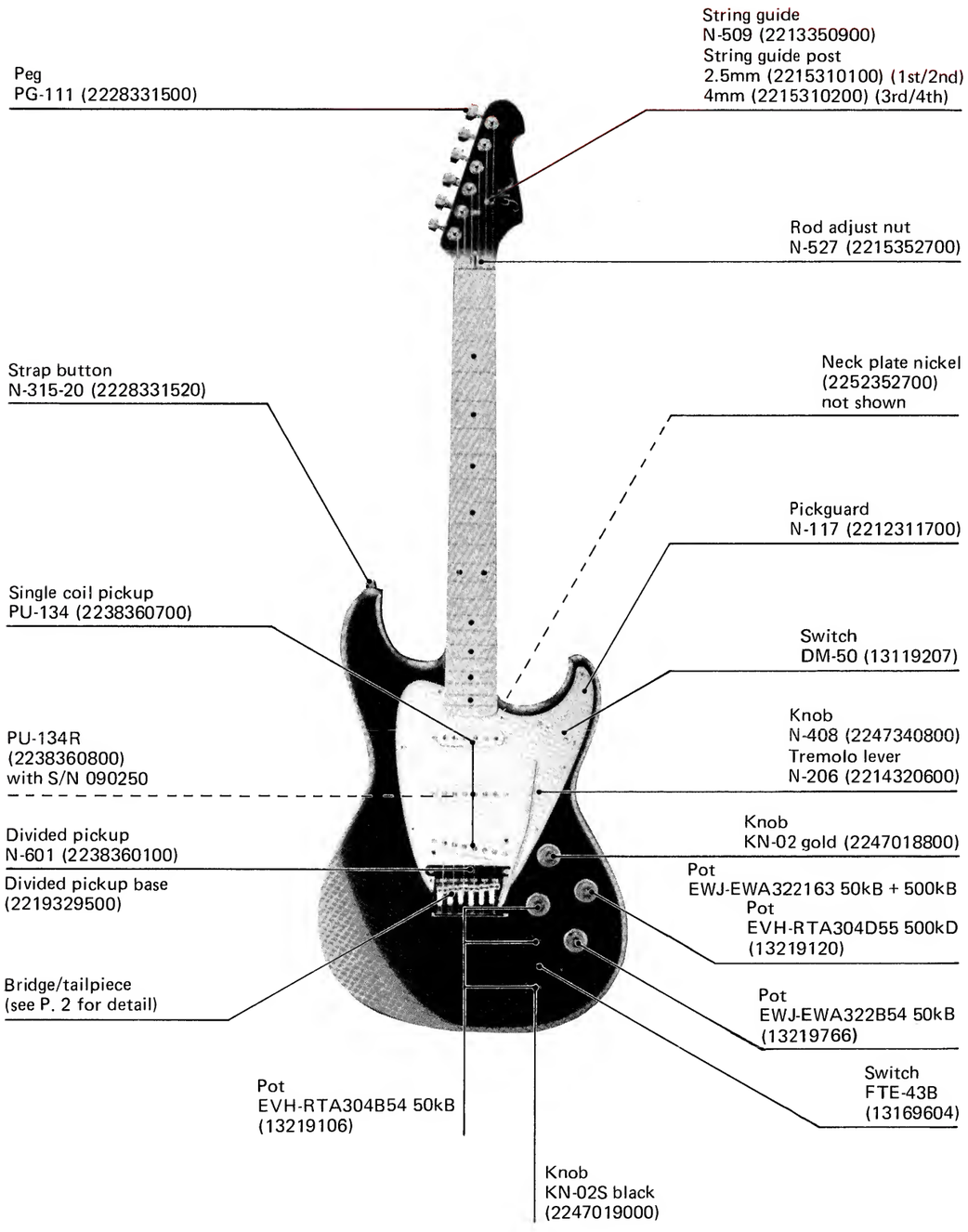
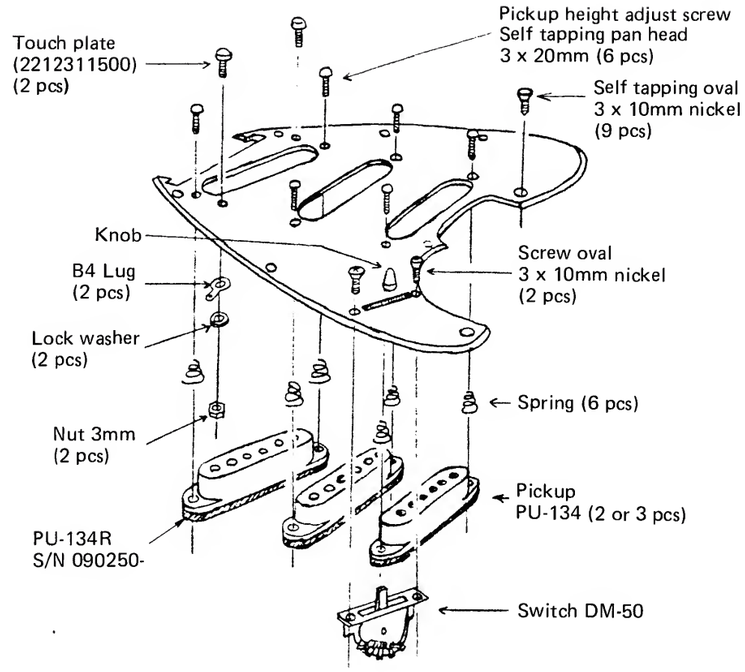
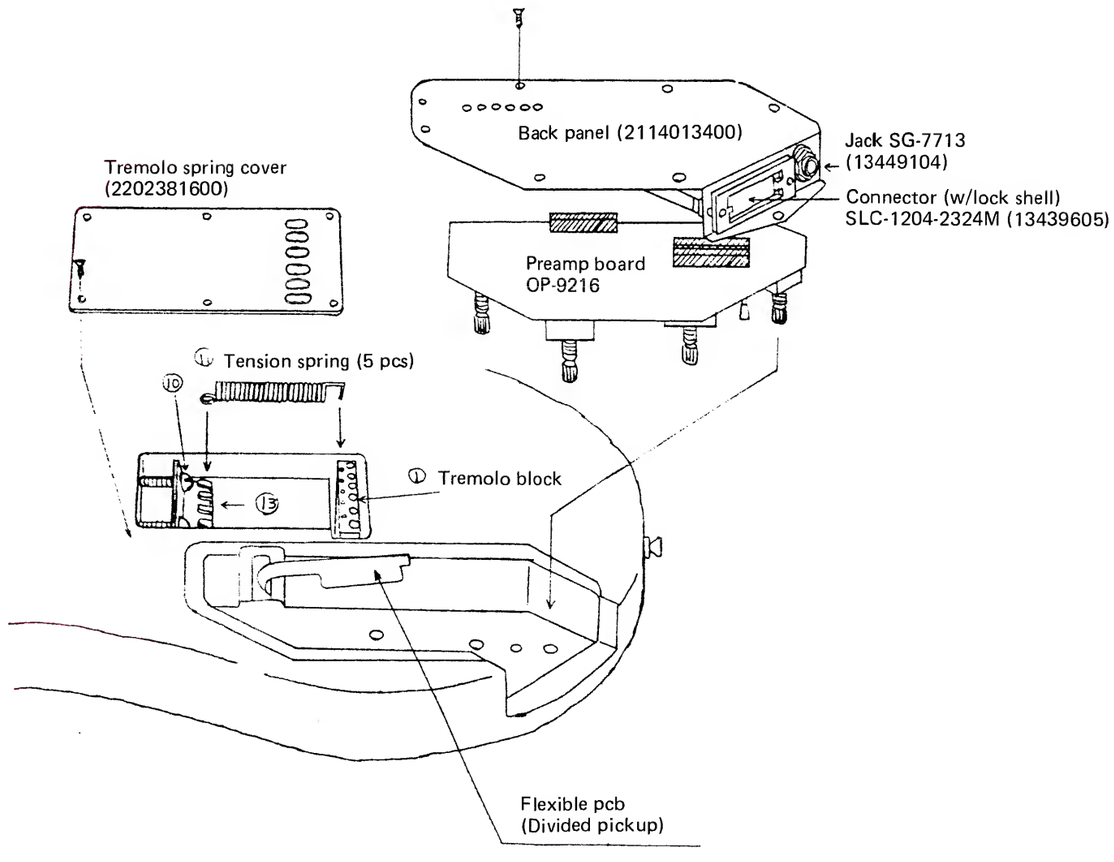
G-505 SERVICE NOTES *First Edition*

SPECIFICATIONS

ERRATA & SUPPLEMENT is attached at the end of the page. ◆







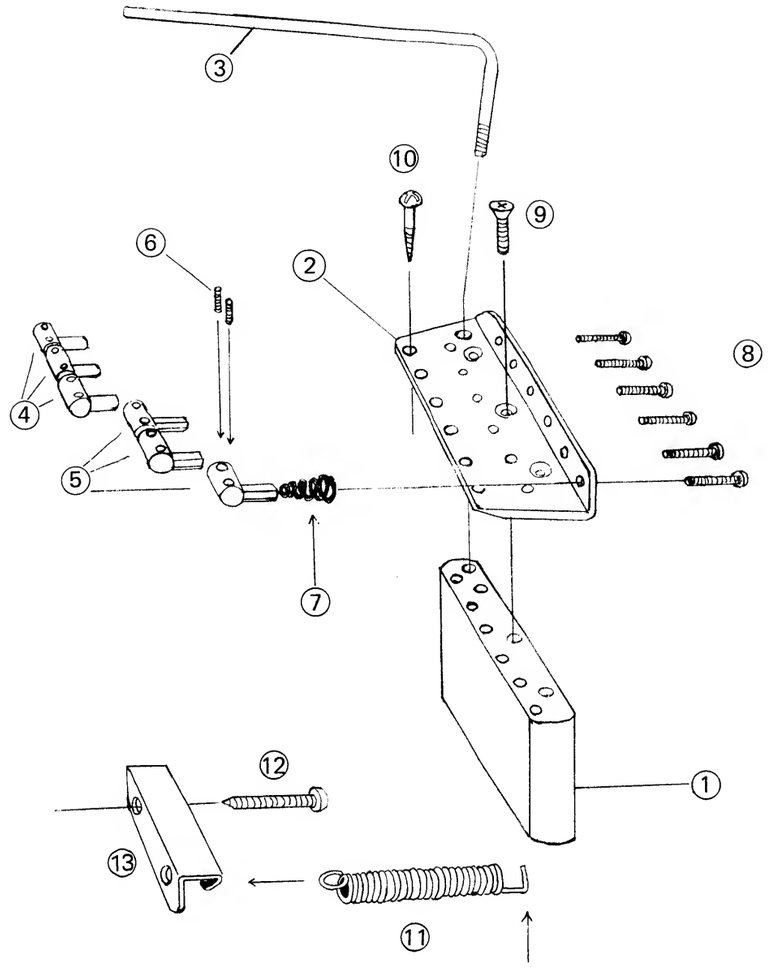


Fig. 1

1	Tremolo block	(2213334100)
2	Bridge base plate	(2213334000)
3	Tremolo lever	(2214320600)
4	Bridge saddle 21mm chrome #1, #2, # 3	(2213390500)
5	Bridge saddle 19mm chrome #4, #5, #6	(2213390600)
6	Height adjust screw (worm) 3 x 8mm . . . . #1, #6 3 x 10mm . . . #2-#5	
7	Saddle spring	
8	Intonation adjust screw 3 x 20mm pan	
9	Screw 4 x 10mm flat	
10	Wood screw 3.6 x 30mm round	
11	Tension spring	(2217330600)
12	Tension adjust screw 5 x 50mm round self tapping	
13	Tension spring bracket	(2219329600)

BRIDGE/TAILPIECE (TREMOLO ASSEMBLY)

On the guitar with tremolo mechanism, balance of tension on the guitar strings and tremolo springs ⑪ determines strings height and length when tremolo lever ③ rests at neutral. Thus, to achieve satisfactory tuning action, understanding of tremolo mechanism and its installation is necessary before starting tuning.

The tailpiece pivots on wood screws ⑩, cylindrical travel range being limited by points ⓐ and ⓑ.

Six screws ⑩ serve as fulcrum as well as anchor for tailpiece mounting plate. Their insertion angle and tightness are key to a stable and smooth action. Screws must be perpendicular to the mounting plate and there should be no clearance between their faces. The entire bottom of mounting plate must be flush with guitar top (Fig. 3-a ②) when all strings are relaxed.

Fig. 3-b Unsettled plate will jolt with lever traveling.

Fig. 3-d Overtightened, the plate resists lever motion.

NOTES:

When replacing tremolo assembly or rescrewing all the screws ⑩, screw in the following order – #1, #6, #2, #3, #4 and #5. As for factory assembly, the number of tremolo springs is five and may be changed to four or three to meet the user's preference.

TUNING. STRING HEIGHT. STRING LENGTH

Both adjustments must be done after conformation of tailpiece setting to the conditions in the preceeding section; and be repeated for a successful result since any tension change on one string will alter the pitch of the remaining strings. This is due to balance point shift, e.g. if a string is wound to raise the pitch, the tailpiece and bridge unit is pulled toward the guitar neck. Five strings slacken and their pitch lower.

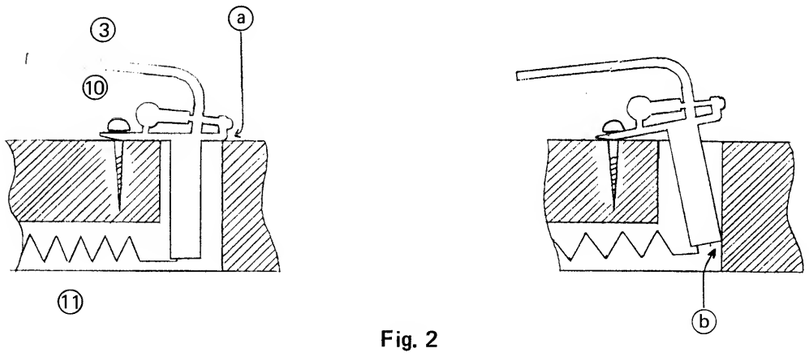


Fig. 2

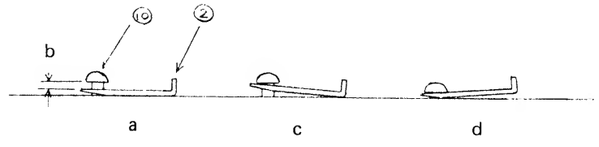


Fig. 3

TUNING (COARSE)

Tune open strings in the usual manner in the order given below. Because of reasons explained above, reference pitch goes down as the adjoining string is tensed. Consequently, this is a relative tuning and should be repeated three times.

1. Relax all of the strings.
2. Tune 5th to 110Hz. Lower any pickup that touches the string.
3. Tune 6th to a pitch perfect fourth below 5th pitch which is lowering as 6th is wound (e.g. the interval might be obtained when 5th lowered to 108Hz and 6th to 80Hz. This is different from in ordinary tuning method but of course is to be corrected in the final adjustment).
4. Tune 4th string to perfect fourth above 5th's (maybe below 146Hz).
5. Similarly, tune 3rd, 2nd and 1st strings with respect to preceeding string (as a reference).

Intervals among strings may be out of tune, leave them as they are.

6. CHECKING NECK AND FINGERBOARD for CAMBERING, WARPING, PULLING or TWISTING

Hold the neck joint with one hand (1); with the other hand, gently hold the guitar head (2). Position the guitar on the table.

View the curve of the fingerboard and neck across the top of the head from both edges alternately (3).

B to H in Fig. 4 are examples of would be occured. Of course any combinations of these examples might be found on the guitar.

When adjusting, tighten or loosen the nut (4), with an 4mm wrench, small amount at a time while checking the result. DO NOT OVERTIGHTEN.

A . . . . . Ideal.

B, C, D . . . . . Adjust truss rod. Check that there is no buzzing when the string is played open. (Slighter curvature shaded in D can be ignored.)

E, F, G, H . . . When possible action is cannot obtained after compensated for by truss rod adjustment, any adjustments it needs should be left to someone with experience on guitar repair.

7. Adjust tension springs ⑪ for 2mm clearance between bottom of the tailpiece and guitar face at the back end with screws ⑫ (See Fig. 5.)

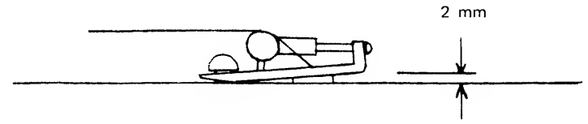


Fig. 5

8. TUNING (2nd)

Back to steps 2-5, this time in combination with step 7. Repeat tuning and measure clearance between tailpiece bottom and guitar top, (Fig. 5). Readjust spring ⑪ tensions as necessary.

9. STRING HEIGHT With strings open adjust screws ⑥ to the height in the table below.

REFERENCE FREQUENCIES

FRET	STRING 6	5	4	3	2	1
0	82.41	110.00	146.83	196.00	246.94	329.63
1	87.31	116.54	155.56	207.65	261.63	349.23
2	92.50	123.47	164.81	220.00	277.18	369.99
3	98.00	130.81	174.61	233.08	293.66	392.00
4	103.83	138.59	185.00	246.94	311.13	415.30
5	110.00	146.83	196.00	261.63	329.63	440.00
6	116.54	155.56	207.65	277.18	349.23	466.16
7	123.47	164.81	220.00	293.66	369.99	493.88
8	130.81	174.61	233.08	311.13	392.00	523.25
9	138.59	185.00	246.94	329.63	415.30	554.37
10	146.83	196.00	261.63	349.23	440.00	587.33
11	155.56	207.65	277.18	369.99	466.16	622.25
12	164.81	220.00	293.66	392.00	493.88	659.26
13	174.61	233.08	311.13	415.30	523.25	698.46
14	185.00	246.94	329.63	440.00	554.37	739.99
15	196.00	261.63	349.23	466.16	587.33	783.99
16	207.65	277.18	369.99	493.88	622.25	830.61
17	220.00	293.66	392.00	523.25	659.26	880.00
18	233.08	311.13	415.30	554.37	698.46	932.33
19	246.94	329.63	440.00	587.33	739.99	987.77
20	261.63	349.23	466.16	622.25	783.99	1046.50
21	277.18	369.99	493.88	659.26	830.61	1108.73

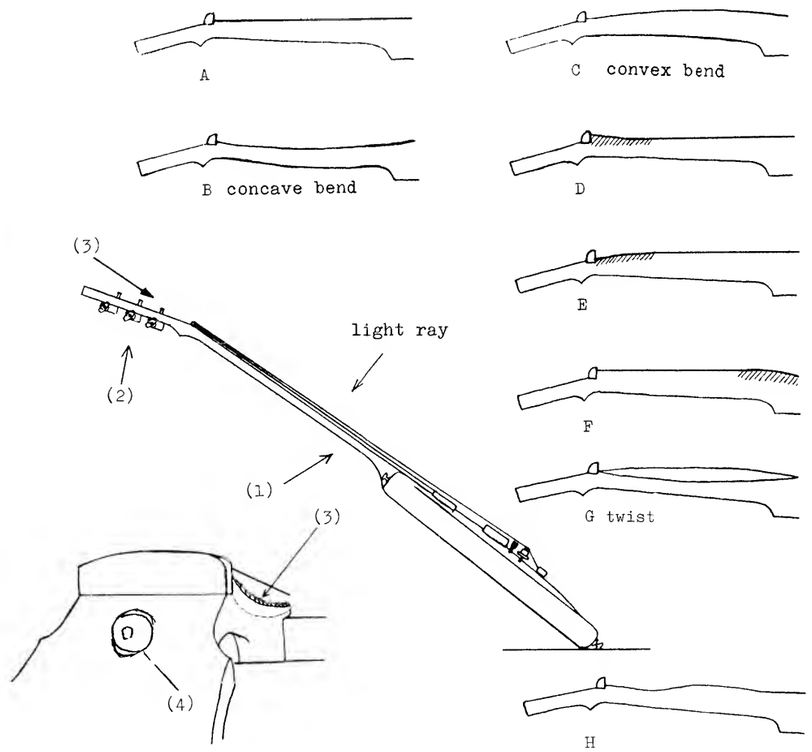


Fig. 4

Standard String Height (at the open 14th)

	1st	2nd	3rd	4th	5th	6th
String Height (mm)	1.5	1.6	1.7	1.8	1.9	2.0

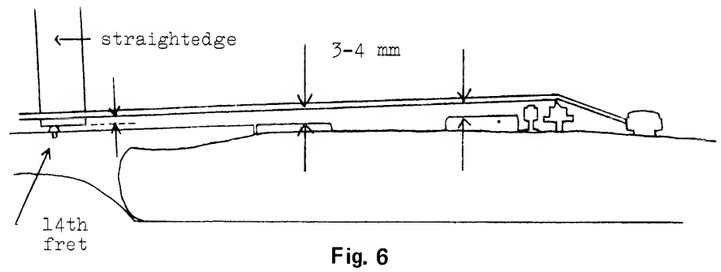


Fig. 6

10. TUNING (3rd) Do steps 2-5.

11. STRING LENGTH (OCTAVE ADJUSTMENT)

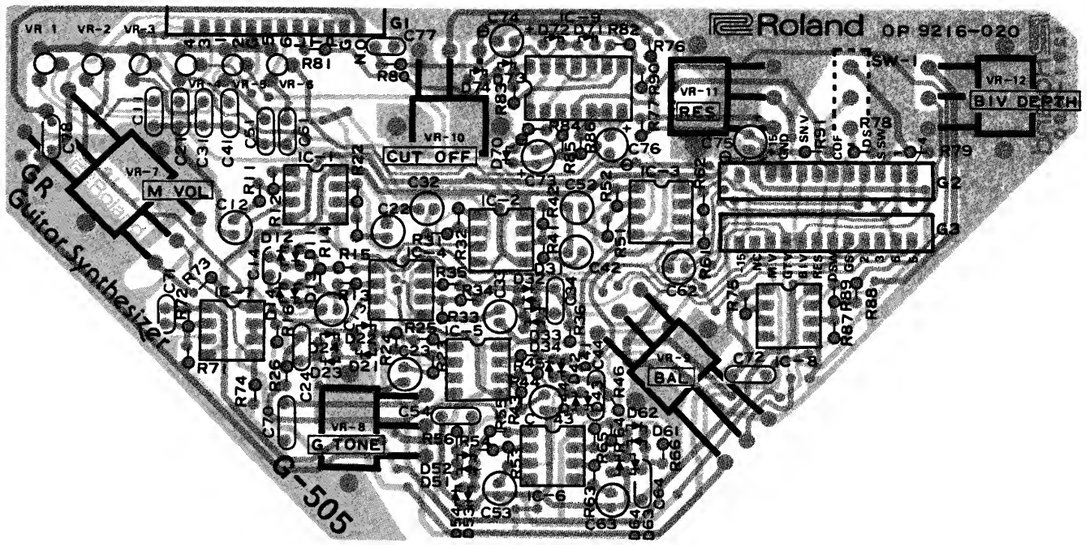
Tune strings (open) to the frequency (fret 0, in the table left).

Test intonation at the 12th fret whether string is sharp or flat in terms of octave pitch. If a string is going sharp at 12th fret, move back the saddle to add string length by turning screw ⑧. If flat, toward neck.

12. TUNING (FINE) Steps 2-5.

13. DIVIDED PICKUP HEIGHT Do not attempt the following steps prior to completion of Tremolo assy adjustments.
Make sure that strings are on the line parallel to fingerboard top curvature.
Slightly off-centered string over divided pickup head can be negligible.
With strings in tune, position divided pickup so that clearances between the head top and the bottom of string are 0.5mm at #1 and 0.8mm at #6, when 21st is fretted.
When tremolo lever is pulled upward to raise pitch, bridges go down and strings come down close to the divided pickup heads. Avoid string from touching with head by lowering the pickup.

14. NORMAL GUITAR PICKUP HEIGHT Possible action on guitar pickup depends greatly on strings and players, with strings supplied 3-4mm at 6th works well. Then, adjust pickup height at 1st side to have well balanced sound from higher strings.
NOTES:
As is usual with most single coil pickup, permanent magnets having strong magnetic force are incorporated with the PU-134. When close coupled with string, the flux will interfere with string vibration, resultant is tremolo-like effect. This is distinctive with relation of front pickup to 6th string fretted at high position.
PU-134R (for Center Pickup)
Employed with S/N 090250 and higher.
As the name implies, PU-134R has reversal magnetic polarity and reversed coil leads. When its output is drawn in combination with front/rear pickups, the mixed output contains in-phase string signal and out-of-phase hum induced extrenally.
WIRE LEADS
PU-134 . . . . Shielded pair
PU-134R . . . Separated yellow-hot; black-cold

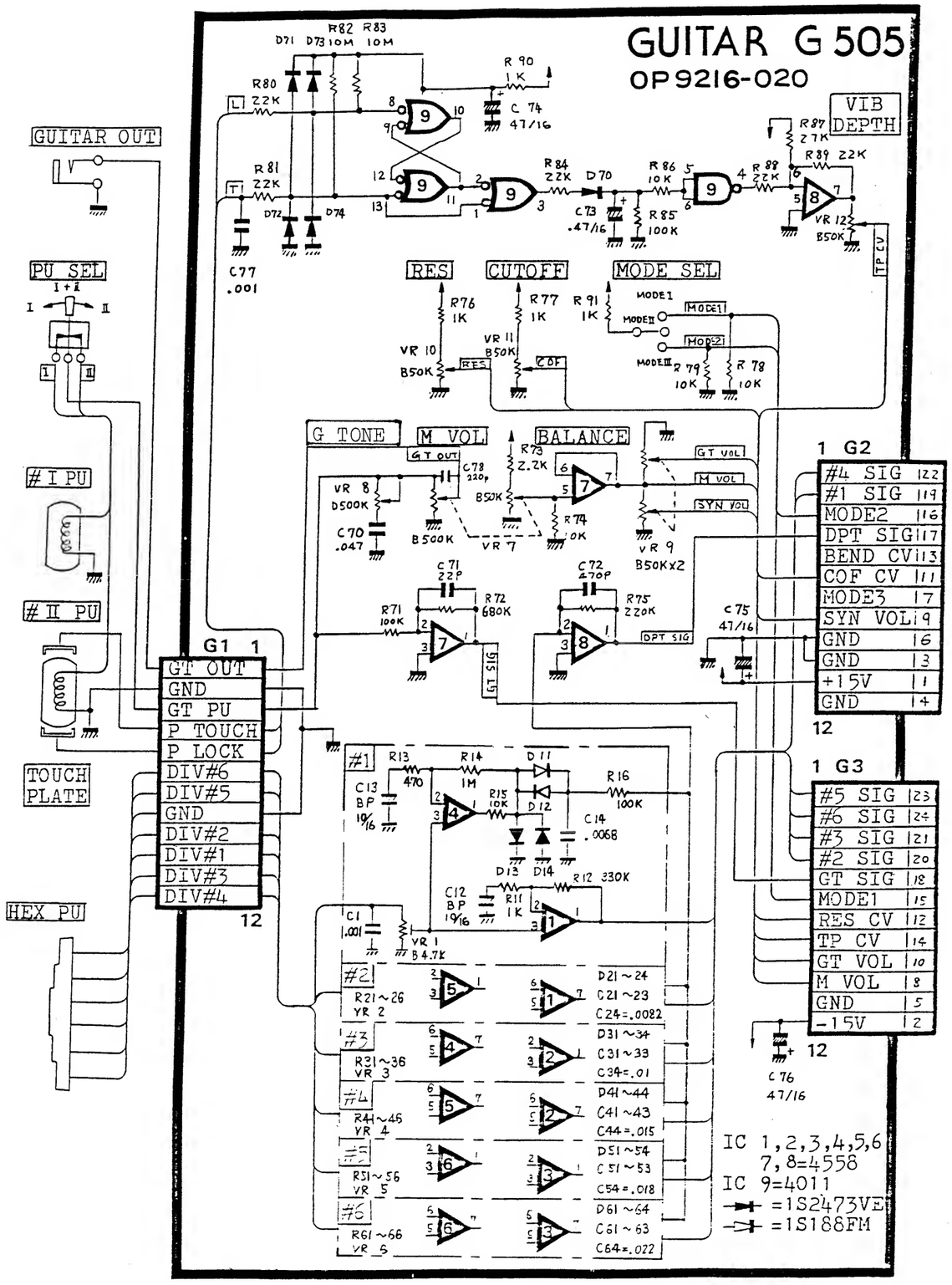


PICKUP SELECTOR

1 FRONT
2 FRONT + CENTER
3 CENTER
4 CENTER + REAR
5 REAR

OP9216-020
(7921602000)
(pcb 2291349000)

15. BALANCING DIVIDED PICKUP OUTPUTS
Variation in divided pickup head sensitivities, due to string or the pickup replacement, can be compensated for by adjusting trimmers of PREAMP board. Although provides the user with easier playing condition, this adjustment should be done after basic adjustments are confirmed.
Connect G-505 to GR-300. Switch COMPRESSION off.
Expose GR-300 VOICING board, connect a scope to a pin of A3 connector (HEX ENV) of GR-300.
Softly plucking corresponding string with a guitar pick, adjust the channel VRO- in G-505 through the hole in the back panel for 5-7V peak. The voltage will increases 8-11V peak at heavy picking.
Adjust all other strings individually in the same manner.
Fine adjust by ear with the aid of monitor amp for well balanced sounds.



PARTS LIST

PCB ASSEMBLY

79216020	Preamp board OP9216-020	
2291349000	PCB less parts	

POTENTIOMETER

13219106	EVH-RTA304B54	50kΩB CO FREQ/RESO/VIB DEPTH
13219120	EVH-RTA304D55	500kΩD G TONE
13219766	EWJ-EWA322B54	50kΩBx2 BALANCE
13219772	EWJ-EWA322163	50kΩB+500kΩB MASTER VOL
13299128	EVN-38C53B	5kΩB trimmer
2219510600	VR support N-106	

SEMICONDUCTOR

15189105	IC μPC4558	
15159104Z0	IC MC14011BCP	
15019108	Di 1S-2473VE	Si, V. mount
15019124	Di 1S-188FM	Ge, V. mount

JACK. CONNECTOR

13439605	SLC-1204-2324M	GR bus
12139303	SLC-1204-24L2	Lock shell
13429121	FH1-12S-2.54DSA	Flexible PCB socket
2291016700	Flexible PCB N-167	
2291338400	Flexible PCB N-384	Divided PU
13449104	Jack SG-7713	

SWITCH

13169604	FTE-43B Mode selecter
13119207	DM-50 P.U. selecter

KNOB

2247019000	Knob KN-02S black
2247018800	Knob KN-02 gold
2247340800	Knob N-408 P.U. selecter

PICKUP

2238360100	Divided pickup N-601
2238360700	Single-coil pickup PU-134
2238360800	PU-134R center, with S/N 090250 and higher
2219329500	Divided PU base N-295
2212311500	Touch plate (R, L same)

BRIDGE/TAILPIECE (TREMOLO UNIT)

2213334100	Tremolo block N-341
2213334000	Bridge base plate N-340
2214320600	Tremolo lever N-206
2213390600	Bridge saddle N-906 19mm Chrome (4–6th)
2213390500	Bridge saddle N-905 21mm Chrome (1–3rd)
	Bridge saddle spring
	Height adjust screw 8mm (1.6)
	Height adjust screw 10mm (2–5)
	Intonation adjust screw
2217330600	Tension spring N-306
2219329600	Tension spring bracket N-296
	Tension adjust screw

PEG

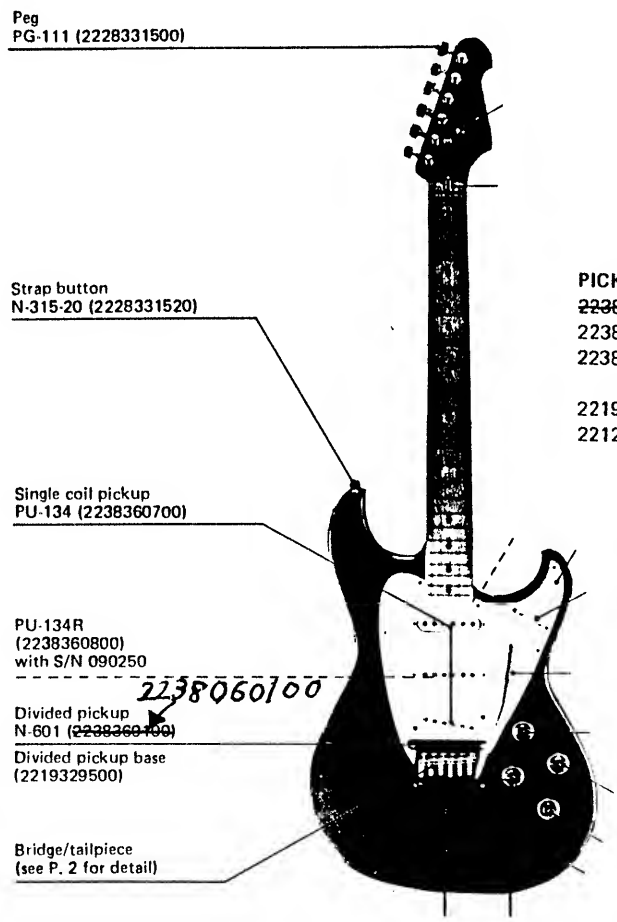
2228331500	Peg (machine head) PG-111
2213350900	String guide N-509
2215310100	String guide post N-101 2.5mm (1/2)
2215310200	String guide post N-102 4mm (3/4)
2215352700	Rod adjust nut N-527

BODY

2212311700	Pickguard N-117
2252352700	Neck plate N-527
2114013400	Back panel N-134
2228331520	Strap button N-315-20
2202381600	Tremolo spring cover N-816

G－５０５　SERVICE　NOTES　　1992.10.30
ERRATA & SUPPLEMENT　正誤表 & 追加情報　ER00062
(Small errors are ignored.　重要でないエラーは無視します。)

Page	WRONG　誤	→	CORRECT　正
1 5	* PHOTOGRAPH／写真 * PARTS LIST／パーツリスト		
	2238~~0~~60100 DIVIDED PICKUP N-601	→	2238060100 DIVIDED PICKUP N-601



PARTS LIST

PICKUP　2238060100
~~2238360100~~ Divided pickup N-601
2238360700 Single-coil pickup PU-134
2238360800 PU-134R center, with S/N 090250 and higher
2219329500 Divided PU base N-295
2212311500 Touch plate (R, L same)